

AMENDMENTS TO THE CLAIMS

Please amend the claims as shown in the following list, which is submitted to replace all prior listings of claims.

1. (Currently amended) A surgical instrument system comprising a surgical instrument configured for complete insertion into a body for use with an electro-mechanical surgical device; ~~comprising~~; a coupling configured to couple the surgical instrument with the electro-mechanical surgical device; a rotatable drive shaft within the coupling to enable the electro-mechanical device to operate the surgical device; a sensor to enable detection of rotational movement of the rotatable drive shaft; and a memory unit housed inside the surgical instrument ~~so that the surgical instrument and the memory unit disposed within said surgical instrument can both be completely inserted into the body,~~ said memory unit configured to store data representing at least one parameter relating to the surgical instrument including usage data representing usage of the surgical instrument as reflected by the rotational movement detected by the sensor; wherein the coupling includes a data connector configured to connect the memory unit with the electro-mechanical surgical device.
2. (Currently Amended) The surgical instrument system according to claim 1, comprising at least one connector configured to removably couple the surgical instrument with at least one ~~rotatable~~ drive shaft of the electro-mechanical surgical device.
3. (Currently Amended) The surgical instrument system according to claim 1, comprising a first connector and a second connector, each of the connectors being configured to removably couple the surgical instrument with a respective drive shaft of the electro-mechanical surgical

device.

4. (Currently Amended) The surgical instrument system according to claim 1, wherein the data is readable by a control system of the electro-mechanical surgical device.

5. (Currently Amended) The surgical instrument system according to claim 1, wherein the data connector is configured to electrically and logically connect the memory unit to a control system of the electro-mechanical surgical device.

6. (Currently Amended) The surgical instrument system according to claim 1, wherein the coupling is configured to detachably attach the surgical instrument to the electro-mechanical surgical device.

7. (Currently Amended) The surgical instrument system according to claim 2, wherein the surgical instrument includes a surgical stapler and cutter instrument.

8. (Currently Amended) The surgical instrument system according to claim 7, wherein the surgical stapler and cutter instrument includes an anvil portion and a staple driver and cutter portion.

9. (Currently Amended) The surgical instrument system according to claim 8, comprising wherein the surgical instrument comprises an anvil drive shaft configured to open and close the anvil portion and a stapler drive shaft configured to drive the staple driver and cutter portion.

10. (Currently Amended) The surgical instrument system according to claim 1, wherein the at least one parameter includes at least one of ~~a usage data~~, a serial number data and a type of the surgical instrument.

11. (Currently Amended) The surgical instrument system according to claim 2, comprising: at least one driven element; and a gear arrangement configured to couple the drive shaft of the electro-mechanical surgical device to the at least one driven element, the gear arrangement being configured to convert a high-speed rotation of the drive shaft to drive the at least one driven element at a high-torque.

12. (Currently amended) A surgical instrument system comprising a surgical instrument configured for complete insertion into a body for use with an electro-mechanical surgical device; ~~comprising~~ a coupling configured to couple the surgical instrument with the electro-mechanical surgical device; a rotatable drive shaft within the coupling to enable the electro-mechanical device to operate the surgical device; a sensor to enable detection of rotational movement of the rotatable drive shaft; and a memory unit housed inside the surgical instrument ~~so that the surgical instrument and the memory unit disposed within said surgical instrument can both be completely inserted into the body,~~ said memory unit configured to store data representing a usage of the surgical instrument including usage data representing usage of the surgical instrument as reflected by the rotational movement detected by the sensor ; wherein the coupling includes a data connector configured to connect the memory unit with the electro-mechanical surgical device.

13. (Currently Amended) The surgical instrument system according to claim 12, comprising at least one connector configured to removably couple the surgical instrument with at least one ~~rotatable~~ drive shaft of the electro-mechanical surgical device.

14. (Currently Amended) The surgical instrument system according to claim 12, comprising a first connector and a second connector, each of the connectors being configured to removably couple the surgical instrument with a respective drive shaft of the electro-mechanical surgical device.

15. (Currently Amended) The surgical instrument system according to claim 12, wherein the data is readable by a control system of the electro-mechanical surgical device.

16. (Currently Amended) The surgical instrument system according to claim 15, wherein the control system is configured to limit usage of the surgical instrument in accordance with the usage data.

17. (Currently Amended) The surgical instrument system according to claim 12, wherein the data connector is configured to electrically and logically connect the memory unit to a control system of the electro-mechanical surgical device.

18. (Currently Amended) The surgical instrument system according to claim 12, wherein the coupling is configured to detachably attach the surgical instrument to the electro-mechanical surgical device.

19. (Currently Amended) The surgical instrument system according to claim 13, wherein the surgical instrument includes a surgical stapler and cutter instrument.

20. (Currently Amended) The surgical instrument system according to claim 19, wherein the surgical stapler and cutter instrument includes an anvil portion and a staple driver and cutter portion.

21. (Currently Amended) The surgical instrument system according to claim 20, ~~comprising~~ wherein the surgical instrument comprises an anvil drive shaft configured to open and close the anvil portion and a stapler drive shaft configured to drive the staple driver and cutter portion.

22. (Currently Amended) The surgical instrument system according to claim 13, comprising: at least one driven element; and a gear arrangement configured to couple the drive shaft of the electro-mechanical surgical device to the at least one driven element, the gear arrangement being configured to convert a high-speed rotation of the drive shaft to drive the at least one driven element at a high-torque.

23. (Currently amended) A surgical instrument system comprising a surgical instrument configured for complete insertion into a body for use with an electro-mechanical surgical device; ~~comprising~~ a coupling configured to couple the surgical instrument with the electro-mechanical surgical device; a rotatable drive shaft within the coupling to enable the electro-mechanical device to operate the surgical device; a sensor to enable detection of rotational movement of the rotatable drive shaft and a memory unit housed inside the surgical instrument ~~so that the surgical instrument and the memory unit disposed within said surgical instrument~~

~~can both be completely inserted into the body~~, said memory unit configured to store data representing a serial number of the surgical instrument and usage data representing usage of the surgical instrument as reflected by the rotational movement detected by the sensor; wherein the coupling includes a data connector configured to connect the memory unit with the electro-mechanical surgical device.

24. (Currently Amended) The surgical instrument system according to claim 23, comprising at least one connector configured to removably couple the surgical instrument with at least one ~~rotatable~~ drive shaft of the electro-mechanical surgical device.

25. (Currently Amended) The surgical instrument system according to claim 23, comprising a first connector and a second connector, each of the connectors being configured to removably couple the surgical instrument with a respective drive shaft of the electro-mechanical surgical device.

26. (Currently Amended) The surgical instrument system according to claim 23, wherein the data is readable by a control system of the electro-mechanical surgical device.

27. (Currently Amended) The surgical instrument system according to claim 23, wherein the data connector is configured to electrically and logically connect the memory unit to a control system of the electro-mechanical surgical device.

28. (Currently Amended) The surgical instrument system according to claim 23, wherein the coupling is configured to detachably attach the surgical instrument to the electro-mechanical

surgical device.

29. (Currently Amended) The surgical instrument system according to claim 24, wherein the surgical instrument includes a surgical stapler and cutter instrument.

30. (Currently Amended) The surgical instrument system according to claim 29, wherein the surgical stapler and cutter instrument includes an anvil portion and a staple driver and cutter portion.

31. (Currently Amended) The surgical instrument system according to claim 30, ~~further comprising~~ wherein the surgical instrument comprises an anvil drive shaft configured to open and close the anvil portion and a stapler drive shaft configured to drive the staple driver and cutter portion.

32. (Currently Amended) The surgical instrument system according to claim 24, comprising: at least one driven element; and a gear arrangement configured to couple the drive shaft of the electro-mechanical surgical device to the at least one driven element, the gear arrangement being configured to convert a high-speed rotation of the drive shaft to drive the at least one driven element at a high-torque.

33. (Currently amended) An electro-mechanical surgical system, comprising: an electro-mechanical surgical device; a surgical instrument configured for complete insertion into a body for use with the electro-mechanical surgical device; at least one rotatable drive shaft removably attachable to the surgical instrument; a motor arrangement configured to rotate the at least one

rotatable drive shaft from a proximal end thereof; a first gear arrangement ~~disposed at a distal end of~~ cooperating with the rotatable drive shaft; at least one element on the surgical instrument driven by the gear arrangement; a sensor to enable detection of rotational movement of the rotatable drive shaft; and a memory unit on the surgical instrument configured to store data representing at least one parameter relating to the surgical instrument including usage data representing usage of the surgical instrument as reflected by the rotational movement detected by the sensor, wherein the gear arrangement is configured to convert a high-speed rotation of the rotatable drive shaft to drive the at least one driven element at a high-torque.

34. (Currently Amended) The electro-mechanical surgical system according to claim 33, wherein the surgical instrument is removably attachable to ~~the distal end of~~ the rotatable drive shaft, the surgical instrument including the at least one element.

35. (Previously presented) The electro-mechanical surgical system according to claim 34, wherein the first gear arrangement is disposed in the surgical instrument.

36. (Previously presented) The electro-mechanical surgical system according to claim 34, wherein the surgical instrument includes a circular surgical stapler attachment.

37. (Previously presented) The electro-mechanical surgical system according to claim 36, wherein the at least one element includes at least one of an anvil of the circular surgical stapler attachment and a staple driver and cutter of the circular surgical stapler attachment.

38. (Previously presented) The electro-mechanical surgical system according to claim 33,

wherein the at least one rotatable drive shaft includes a first rotatable drive shaft and a second rotatable drive shaft, and wherein the at least one element includes a first element driven by the first rotatable drive shaft and a second element driven by the second rotatable drive shaft, and wherein the gear arrangement includes a first gear system configured to convert a high-speed rotation of the first rotatable drive shaft to drive the first driven element at a high-torque and a second gear system configured to convert a high-speed rotation of the second rotatable drive shaft to drive the second driven element at a high-torque.

39. (Previously presented) The electro-mechanical surgical system according to claim 38, wherein the motor arrangement includes a first motor configured to rotate the first rotatable drive shaft and a second motor configured to rotate the second rotatable drive shaft.

40. (Currently Amended) The electro-mechanical surgical system according to claim 38, wherein the surgical instrument is removably connectible to ~~the~~ a distal end of the first and second rotatable drive shafts, the surgical instrument including the first and second elements.

41. (Previously presented) The electro-mechanical surgical system according to claim 40, wherein the first element includes an anvil and the second element includes a staple driver and cutter.

42. (Currently Amended) The electro-mechanical surgical system according to claim 33, ~~further~~ comprising a second gear arrangement disposed between the motor arrangement and the at least one rotatable drive shaft, the second gear arrangement configured to convert a high torque transmitted by the motor arrangement to rotate the at least one rotatable drive shaft at a

the high speed.

43. (Previously presented) The electro-mechanical surgical system according to claim 33, wherein the first gear arrangement includes at least one of a spur gear arrangement, a planetary gear arrangement, a harmonic gear arrangement, a cycloidal drive arrangement and an epicyclic gear arrangement.

44. (Previously presented) The electro-mechanical surgical system according to claim 42, wherein each of the first gear arrangement and the second gear arrangement includes at least one of a spur gear arrangement, a planetary gear arrangement, a harmonic gear arrangement, a cycloidal drive arrangement and an epicyclic gear arrangement.

45. (New) The surgical instrument system according to claim 1, 12, 23 or 33 wherein the sensor is positioned relative to the surgical device to detect rotational movement of the rotatable drive shaft.

46. (New) The surgical instrument system according to claim 1, 12, 23, or 33 wherein the sensor is disposed relative to the rotatable drive shaft to detect rotational movement of the rotatable drive shaft.

47. (New) The surgical system according to claim 46 wherein the sensor detects the amount of rotational movement of the rotatable drive shaft.

48. (New) The surgical instrument system according to claim 47 wherein the sensor detects the direction of rotational movement of the rotatable drive shaft.